ULANOVSKIY, I.B.; TURPAYEVA, Ye.P.; KOROVIN, Yu.M.

Effect of balanomorpha on the corrosion of stainless and carbon steels. Trudy Inst.fiz.khim. 8:360-372 '60. (MIRA 14:4)

(Steel—Corrosion) (Marine biology)

MUROMTSEV, A.K.; ULANOVSKIY, I.B.; SHABODALOV, I.P.; KOROVIN, Yu.M.

Testing coatings for metal protection in fluctuating waterline zones.
Trudy Inst.fiz.khim. 8:387-395 '60. (MIRA 14:4)

(Protective coatings—Testing)
(Hulls (Naval architecture)—Corrosion)

ULANOVSKIY, I.B.; ROZENBERG, L.A.; KOROVIN, Yu.M.

Influence of bacteria on the electrode potential of stainless steels in sea water. Mikrobiologiia 29 no.2:281-286 Mr-Ap '60 (MIRA 14:7)

1. Institut okeanologii AN SSSR.
(BACTERIA) (STEEL, STAINLESS)

ROZENBERG, L.A.; ULANOVSKIY, I.B.

Development of bacteria during cathodic polarization of steel in sea water. Mikrobiologiia 29 no.5:721-724 S-O '60. (MIRA 13:11)

1. Institut okeanologii AN SSSR.
(SEA WATER—MICROBIOLOGY) (STEEL—CORROSION)
(POLARIZATION (ELECTRICITY))

18.8300

77520
SOV/80-33-1-29/49

AUTHORS: Korovin, Yu. M., Ulanovskiy, I. B.

TITLE: Effect of pH Value on the Electrode Potential of Stainless Steels

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 167-172 (USSR)

ABSTRACT: The effect of pH value on the electrode potential of stainless steels was studied in connection with corrosion of stainless steels in sea water. The experiments were conducted in water of the Black Sea with pH values from 8.5 to 1, adjusted by addition of hydrochloric acid. Steel plates (50 x 10 x 2 mm) of different composition were used. It was shown that a decrease in pH value causes a sharp shift of electrode potentials of many stainless steels towards the negative, which leads to the formation of an intensive galvanic couple of the metal gap and surrounding surface. Study of the

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effect of Ti, Mo, Ni, and Cr on the electrode potential show that the rate of stainless steel corrosion caused by the shift of the electrode potential towards the negative as result of pH lowering can be decreased by changing the composition of the steel (addition of the above-mentioned elements). Experiments show that reducing the salinity of the sea water from 18 to 5% does not lessen the shift of electrode potential, that is, the corrosion of stainless steel. The above conclusions can be illustrated by some of the given curves (see Figs. 1, 5, and 6).

Effect of pH Value on the Electrode Potential of Stainless Steels

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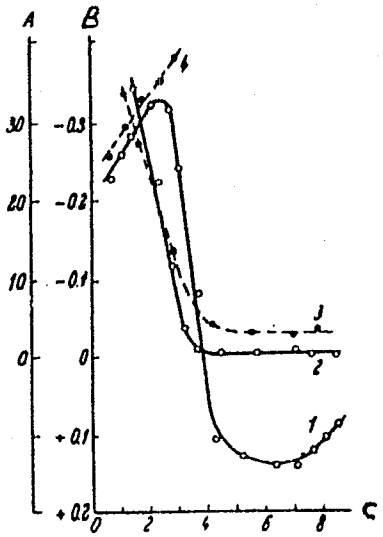

Card 3/6 Fig. 1. See Card 4/6 for Caption

Effect of ph Value on the Electrode Potential of Stainless Steels

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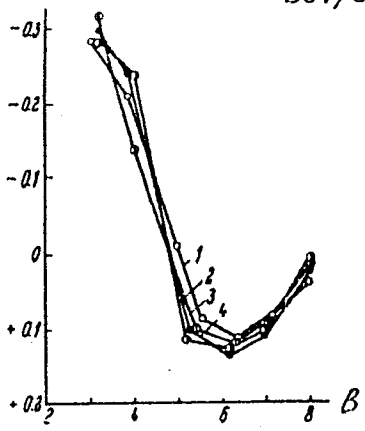

Fig. 6. Electrode potential of steel 1Kh13 at different salinity. (A) Potential (in v); (B) ph value. Salinity: (1) 18%; (2) 15%; (3) 10%; (4) 5%.

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Effect of pH Value on the Electrode Potential of Stainless Steels

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SOV/80-33-1-29/49

Fig. 1. Electrode potential and the rate of dissolution versus pH. (A) Rate of dissolution (g/m^2 x day); (B) potential (in v); (C) pH value. (1) Electrode potential of steel 1Kh13; (2) rate of dissolution of steel 1Kh13; (3) rate of dissolution of steel 3; (4) electrode potential of steel 3.

There are 7 figures; and 8 references, 1 U.S. and 7 Soviet. The U.S. reference is: J. Everhart, Materials and Methods, 35, 5 (1952).

ASSOCIATION: Institute of Physical Chemistry of USSR Academy of Sciences (Institut fizicheskoy khimii AN SSSR)

SUBMITTED: January 19, 1959

Card 4/6

Effect of ph Value on the Electrode Potential of Stainless Steels

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SOV/80-33-1-29/49

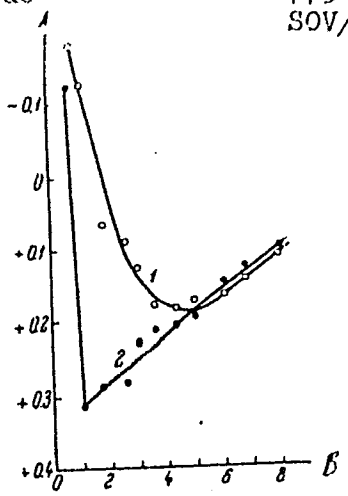

Fig. 5. Effect of Ti on electrode potential. (A) Potential (in v); (B) pH value. Steel: (1) 1Kh18N9; (2) 1Kh18N9T.

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B/080/60/033/011/009/014
A003/A001

AUTHOR: Ulanovskiy, I. B.

18

TITLE: The Change in the pH Value of a Solution in the Corrosion of Carbon Steels in Sea Water

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 11, pp. 2557-2562

TEXT: The corrosion of carbon steel in sea water is accompanied by a considerable change of the pH value. The effect of anode and cathode potentials on the change of the pH value was investigated on a galvanic couple originated by the external current. Two samples of steel 3 of 1.6 mm in diameter and 50 mm long were placed for polarization into glass cylinders 50 mm high. Water from the Black Sea with a salinity of 18‰ and 1‰ solutions of NaCl, NaCl + $MgSO_4$ and NaCl + $CaCl_2$ were used as media. One of the most important factors determining the pH value of sea water in the case of a small ratio between solution volume and steel surface is the density of the corrosion current. The minimum value (pH 4) is reached with a current density of 0.1 ma/cm^2 and does not practically change up to 0.8 ma/cm^2. It was assumed that the pH of sea water decreases due to deposition of films on the cathode sections. The principal component of these films is $CaCO_3$.

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S/080/60/033/011/009/014
A003/A001

The Change in the pH Value of a Solution in the Corrosion of Carbon Steels in Sea Water

This assumption was confirmed by experimental results. In a neutral NaCl solution with current densities corresponding to currents of self-dissolution the pH value is 6.7-6.8. With the addition of calcium ions the pH value decreases to 4.5, but only at a current density below 0.1 ma/cm^2. The addition of magnesium ions also reduces the pH value to 4.5, but at current densities of 0.1-0.7 amp/cm^2. The pH value is also affected by time. At a current density of 0.1 ma/cm^2 the minimum pH value is attained after 24 hours, after this time it remains practically constant. With a decrease of the ratio between the volume of sea water and the metal surface the effect of the current density on the pH value increases. At a ratio of 25:1 the pH value 4.8 is attained with a current density of 0.2 ma/cm^2, at 10:1 with 0.14 ma/cm^2, at 1:1 with 0.01 ma/cm^2. With an increase of the ratio the effect of calcium and magnesium ions decreases and the effect of difficultly soluble corrosion products increases. The change of the pH value in anode zones was also investigated. It was shown that the pH value in the anode region decreases with an increase in the current density and the time of polarization. The pH value decreases at first rapidly to 4.5 - 4.0. The oxygen concentration in

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S/080/60/033/011/009/014
A003/A001

The Change in the pH Value of a Solution in the Corrosion of Carbon Steels in Sea Water

gaps and slits is decreased due to the self-dissolution of metal. This difference in the oxygen concentration leads to the formation of a negative potential. At a pH value of 8 the decrease of the oxygen concentration from 10 to 1 mg/l shifts the electrode potential of steel by 60-70 mv to the negative side. There are 8 graphs, 2 tables and 6 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR)

SUBMITTED: February 10, 1960

Card 3/3

S/020/60/132/03/58/066
B011/B005

18.8300

AUTHORS: Tarasov, N. I., Ulanovskiy, I. B.

TITLE: Influence of Corn Barnacles on the Corrosion of Carbon Steel

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3, pp. 696 - 699

TEXT: Previously (Ref. 1), the authors had investigated the corrosion of stainless steel due to barnacles. In the present paper, they are dealing with carbon steels. The experiments were made by the methods described in the Black Sea. The surface of carbon steel is well preserved under the basal portions of the calcareous shells of barnacles even after several years in sea water, e.g. on ships and hydrotechnical constructions. The metal surface is particularly well preserved if the samples were placed into the sea at the time of intensive settlement of barnacle larvae. In such cases, the basis of the shell is formed on a surface which is almost free of corrosion products. Sometimes the barnacles settle so densely that nearly no interspaces are left between their shells. Already one single layer of barnacles protects the metal efficiently, and reduces corrosion

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Influence of Corn Barnacles on the Corrosion of Carbon Steel

S/020/60/132/03/58/066
B011/B005

(Fig. 1). Table 1 contains data of the corrosion intensity within 6 months in the bay of Novorossiysk. As compared with samples free of barnacles, corrosion is only half. The difference becomes even greater in the course of time. Similar results are obtained in other ports, and also apply in the case of other steel types. The authors copperplated samples with barnacle-covered surface, and found that the basis of the shell, as a rule, sticks fast to the steel. In this way, the access of oxygen and sea water to the metal is prevented, and oxygen depolarization is avoided. In some cases - if water penetrates under the basis of the shell - the electrodic potential may become more negative than the potential of the surrounding surface. In this case, the metal surface under the shell acts as an anode and decomposes while the surrounding surface acts as a cathode. Decomposition will, however, be small: a) If the said macropair is closed by the mantle cavity and the bottom of the shell, the current intensity is strongly reduced by the calcareous basis due to increasing internal resistance. This was proven by measurements of the authors. b) If the galvanic pair is closed by the narrow interspace between the basis and the metal, corrosion is negligibly small. After the death of the barnacle, the shell remains clinging to the metal, though not so fast as before. Corrosion

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Influence of Corn Barnacles on the Corrosion of Carbon Steel

S/020/60/132/03/58/066
B011/B005

remains, however, small since in the course of time the shells form an uninterrupted protective layer (Fig. 2). The effect of this layer is shown in Table 2. Fig. 3 shows a case of destruction of varnish- and color layers by barnacle shells. In such cases, corrosion assumes a ring shape round the shell. Bryozoa and Serpulidae have a similar protective action as barnacles (Fig. 4). The effect of barnacles in other seas may be different from that observed in the Black Sea. There are 4 figures, 2 tables, and 8 Soviet references.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanology of the Academy of Sciences, USSR)

PRESENTED: January 4, 1960, by Ye. N. Pavlovskiy, Academician and P. A. Rebinder, Academician

SUBMITTED: March 20, 1959

Card 3/3

ULANOVSKIY, I.B.; TARASOV, N.I.; TURPAYEVA, Ye.P.; KOROVIN, Yu.M.

Corrosion of stainless steel due to the vital activities of acorn barnacles. Dokl.AN SSSR 132 no.4:941-944 Je '60. (MIRA 13:5)

1. Institut okeanologii Akademii nauk SSSR. Predstavlenc akademikom Ye.N. Pavlovskim i akademikom P.A.Rebinderom.
(Black Sea--Cirripedia)
(Steel, Stainless--Corrosion)

ULANOVSKIY, I.B.; TURPAYEVA, Ye.P.; KOROVIN, Yu.M.; SIMKINA, R.G.

The cirriped Balanus improvisus Darwin as a factor causing corrosion of stainless steel. Trudy Inst. okean. 49:235-241 '61.

(Black Sea--Cirripedia) (Steel, Stainless--Corrosion) (MIRA 15:1)

ULANOVSKIY, I.B.; TURPAYEVA, Ye.P.; SIMKINA, R.G.; KOROVIN, Yu.M.

Effect of the bivalvular mollusk Mytilus galloprovincialis L. on the corrosion of steel. Trudy Inst. okean. 49:242-247 '61.
(MIRA 15:1)

(Black Sea--Lamellibranchiata) (Steel--Corrosion)

ROZENBERG, L.A.; KOROVIN, Yu.M.; ULANOVSKIY, I.B.

Effect of bacteria on the corrosion of stainless steel. Trudy Inst. okean. 49:248-257 '61. (MIRA 15:1)
(Sea water--Microbiology)
(Steel, Stainless--Corrosion)

S/080/62/035/005/009/015
D205/D307

AUTHORS: Ulanovskiy, I. B., Korovin, Yu. M. and Sevast'yanov, R. F.

TITLE: Influence of hydrogen sulphide on the electrode potential of stainless steels

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 5, 1962, 1065-1070

TEXT: In previous work on this subject H_2S was regarded as a stable compound. However, H_2S is itself oxidized, giving a series of varying intermediates depending on the conditions - oxygen concentration, pH, presence of catalysts, etc. It was, therefore, of interest to study the influence of each of the intermediates on the electrode potential of stainless steel. Steels 1Х18Н9Т (1Kh18N9T) and 1Х13 (1Kh13) were investigated in Black Sea water of pH 8. The ratio of the forms of H_2S (H_2S, HS^- and S^{-2}) depends on the pH, which was varied down to the value of 2.0. The elec-

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trode potential was constant in the pH range of 8.0 - 3.5. Further lowering of the pH caused a sudden drop of 0.22 V. This is explained by the disappearance of HS^- ions at pH 3.5. In the presence of 10 mg/l of O_2 the electrode potentials are more positive than in its absence. At pH 3.5, the potential is shifted by 0.55 V towards the negative side. There is no such shift in the absence of H_2S in both aerobic and anaerobic conditions. The oxidation and influence of H_2S and its oxidized forms SO_3^{-2}, $S_2O_3^{-2}$, SO_4^{-2} on the electrode potential were also studied. The largest influence was exerted by H_2S and SO_3^{-2}, both shifting the potential towards negative values. The anodic passivity which hampers the destruction of stainless steels is strongly influenced by the concentration of H_2S. While without H_2S anodic passivity takes place at a current density of 3 $\mu amp/cm^2$ at 35 mg/l of H_2S the required current density is three times higher and at 60 mg/l

Influence of hydrogen ... S/080/62/035/005/009/015
D205/D307

9 to 10 times higher. There are 7 figures.

SUBMITTED: March 13, 1961

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S/080/62/035/008/002/009
D202/D308

AUTHORS: Ulanovskiy, I.B., and Korovin, Yu.U.

TITLE: The effect of oxygen concentration on the onset of destruction in narrow cracks

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 8, 1962, 1753-1759

TEXT: The corrosion resistance of steels, containing different amounts of Cr, Ni, Mo and Ti, to sea water has been studied. The effects of O_2 and Cl' concentration in water, that of anodic polarization of the crack surface and of crack width on the degree of corrosion has been investigated. The method employed consisted of determining the time required for the onset and destruction of passive films on the clearance surface, by plotting anodic polarization curves at different O_2 concentrations and at different pH of the sea water. It was found that O_2 favorably affects the protective film formation, while a decrease in crack width has a

Card 1/2

strong unfavorable effect, as it hinders the diffusion of O_2 into the crack and increases the Cl' concentration in it. The corrosion resistance depends also on the composition of the steel; thus up to 25 % additions of Ti, Mo or Cr increase the corrosion resistance. There are 7 figures and 4 tables.

ASSOCIATION: Institut fizicheskoy khimii ANSSSR (Institute of Physical Chemistry, AS USSR)

SUBMITTED: January 27, 1961

S/080/62/035/012/006/012
D217/D307

AUTHORS: Ulanovskiy, I.B., Sevast'yanov, V.F. and Korovin, Yu.M.

TITLE: Influence of hydrogen sulfide on the corrosion of carbon steel

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 12, 1962, 2674-2678

TEXT: The influence of H_2S, formed by the action of sulfate-reducing bacteria in sea water, on the corrosion of carbon steels was studied by investigating its effects on the rate of corrosion, both in the absence and in the presence of oxygen, and its corrosive action at various pH values of the corrosive solution. The effect of the mechanism of oxidation of H_2S on the rate of corrosion was also studied. It was found that corrosion increases in the absence of oxygen, even at low H_2S concentrations, owing to the promotion of the anodic reaction, but owing to the stifling of the cathode reaction, it tends to decrease with time. In the presence

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Influence of hydrogen ...

of oxygen, introduction of a small quantity of H_2S reduces the rate of corrosion owing to reduction in oxygen concentration. Corrosion is greatly accelerated under the influence of H_2S on lowering the pH to 5.0 - 4.0, owing to the drastic intensification of depolarization by hydrogen. The mechanisms of oxidation of H_2S into $S_2O_3^{--}$ and SO_4^{--} at a concentration of up to 100 mg/l exerts no influence on the intensity of corrosion. SO_3^{--} ions in the presence of oxygen markedly reduce the rate of corrosion owing to the reduction in oxygen concentration brought about by the oxidation reaction. There are 8 figures and 3 tables.

SUBMITTED: October 24, 1961

Card 2/2

ULANOVSKIY, I.B.; GERASIMENKO, A.D.

Influence of algae on the corrosion of carbon steel in sea water and the effect of ultrasonic vibrations on the intensity of photosynthesis of algae. Trudy Inst. okean. 70:246-251 '63. (MIRA 17:7)

ISHCHENKO, N.I.; ULANOVSKIY, I.B.

Protective effect of aerobic bacteria on the corrosion of carbon steel in sea water. Mikrobiologiia 32 no.3:521-525 My-Je '63
(MIRA 17:3)

1. Odesskiy institut inzhenerov morskogo flota.

ULANOVSKIY, I.B.

Corrosion vapors of differential aeration. Zhur.prikl.khim. 37 no.7:1513-1517 Jl '64. (MIRA 18:4)

L 23893-66 EWT(m)/T/EWP(t) IJP(c) JD/HW/WB

ACC NR: AP6008619 (N) SOURCE CODE: UR/0365/65/001/006/0643/0647

AUTHOR: Ulanovskiy, I. B.

ORG: Black Sea Experimental Scientific Research Station (Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya stantsiya)

TITLE: Conditions for cathodic protection of stainless steels in crevices

SOURCE: Zashchita metallov, v. 1, no. 6, 1965, 643-647

TOPIC TAGS: electrode potential, stainless steel, sea water corrosion, cathode polarization / 1Kh13 steel

ABSTRACT: The investigation was conducted to extend the work of N. D. Tomashev (Teoriya korrozii i zashchity metallov, Izd-vo AN SSSR, M., 1959, str. 232) and particularly to determine the maximum negative potential in crevices on the surface of stainless steels, formed as a result of sea water corrosion of the steel surface. The effect of different oxygen concentrations in sea water on the electrode potential of 1Kh13 steel specimens was determined. The electrode potential of an open surface was compared with that in a narrow slit. The latter was produced by affixing a plexiglass strip to the steel surface so as to form a slit of 0.01-mm width. The experimental results are presented in graphs and tables (see Fig. 1). It was found that the potential difference between the slit and surrounding surface was

Card 1/2

UDC: 620.197.5

L 23893-66

ACC NR: AP6008619

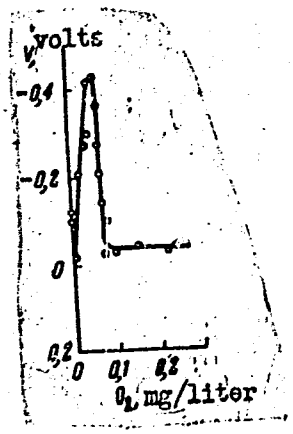

Fig. 1. Dependence of the stationary potential of steel 1Kh13 on the oxygen concentration in sea water (pH 8.2).

-0.5 volt (the slit having the more negative potential). For protection of surfaces containing slits in which the pH is lower than in the surrounding medium, a more negative potential must be applied to the open surface. The value of the latter potential must be determined separately for each type of steel used. Orig. art. has: 1 table and 4 graphs.

SUB CODE: 07/ SUBM DATE: 14Nov64/ ORIG REF: 004

Card 2/2dda

ACCESSION NR: [illegible]

AUTHOR: Ulanovskiy, I. B.

TITLE: The effect of pH on corrosion in apertures

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 2, 1965, 356-360

TOPIC TAGS: anode corrosion, stainless steel corrosion, titanium corrosion, aluminum corrosion, zinc corrosion, cadmium corrosion, sea water, metal passivation, anode polarization

ABSTRACT: The effect of pH on anodic corrosion in apertures, i.e., under conditions favoring an aeration differential was studied under laboratory conditions as well as directly in sea water. The previously published experimental technique (Zh. Prikl. Khim. v. 35, no. 7, 1962, 1753) was used for the laboratory tests involving metals with passivated films, i.e. stainless steel 1Kh13, titanium VT-1, aluminum AV-00, and metals with weak passivation properties in seawater, i.e. zinc Ts0, cadmium Kd0 and steel 3. The results

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L 32660-65

ACCESSION NR: AP5005568

of pH in apertures, failure of the protective passivating layer and retardation in

[illegible] stainless steel and

[illegible] is small where no [illegible]

in pH [illegible]

[illegible]

e.g. [illegible] cadmium, [illegible]

figures.

[illegible] Institut fizicheskoy khimii AN SSSR (Physical Chemistry Institute)

SUBMITTED: 25Jan63 [illegible] SUB [illegible]

NO REF SOV: 009 [illegible]

Card 2/2

L 28542-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6013809 (N) SOURCE CODE: UR/0000/65/000/000/0359/0365

58
B+1

AUTHOR: Ulanovskiy, I. B.

ORG: none

TITLE: Corrosion of zinc, cadmium and lead in clearance gaps

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2. Moscow, Izd-vo Metallurgiya, 1965, 359-365

TOPIC TAGS: sea water corrosion, zinc, cadmium, lead, oxygen, electric current

ABSTRACT: The corrosion resistance of metals in sea water is greatly affected by clearance gaps, since the O_2 concentration and pH value in these gaps decrease at a fast rate. Zn and Cd are widely used as anodic galvanic coatings while Sb is used in cable sheaths, in linings of industrial chemical apparatus. Corrosion of these metals in the clearances was tested by a method described earlier (Ulanovskiy, I. B., Korovin, Yu. M. ZhPKh, 1962, t. 35, 8, 1953). Findings: 1. Zinc: when the O_2 concentration in the clearances decreases from 9 to < 1 mg/liter, the current intensity of the differential-aeration pair increases to a considerable extent -- > 40 μa for 0.1 mg O_2/liter, and when both O_2 concentration and pH value decrease, this intensity increases by 20-30%. 2. Cadmium: even a slight increase in O_2 concentration in the clearances produces a differential-aeration pair with a high current intensity (e.g.

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L 28542-66
ACC NR: AT6013809

160μa when O_2 concentration is 0.1 mg /liter). The decrease in pH value, on the other hand, has no effect on this current intensity for Cd. 3. Lead: the findings are roughly the same as for Zn, except that pH value does not exert any appreciable effect on the current intensity of the differential-aeration pair. Thus, when pH value decreases from 8.2 to 6, the pair's current intensity decreases from 32 to 28 μa. Orig. art. has: 1 table, 7 figures.

SUB CODE: 13,07 / 21,28/ SUBM DATE: 19Jul65/ ORIG REF: 004

Card 2/2

L 28541-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6013808 (N) SOURCE CODE: UR/0000/65/000/000/0351/0358

AUTHOR: Golubev, A. I.; Ulanovskiy, I. B.; Korovin, Yu. M.

47
44
B+1

ORG: none

TITLE: Corrosion of aluminum and titanium in clearance gaps

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2. Moscow, Izd-vo Metallurgiya, 1965, 351-358

TOPIC TAGS: aluminum alloy, titanium base alloy, copper containing alloy, sea water corrosion, oxygen, shipbuilding engineering/AV00 aluminum, AMg-5 Al alloy, D16 Al alloy, VT-1D Ti-Cu alloy

ABSTRACT: The article deals with the processes of the decrease in O_2 concentration in clearance gaps, the effect of O_2 and pH value on electrode potentials, and the work of macro-corrosion pairs, as investigated by a previously described method (Ulanovskiy, I. B., Korovin, Yu. M. ZhPKh, 1962, 35, 8, 1753). On Al and Ti alloys exposed to sea water the O_2 concentration in the clearance gaps sharply decreases to an insignificant level owing to the intense rate of consumption of O_2 for passivation processes in narrow gaps; in the case of Al, if this level falls below 0.5 mg O_2 per liter, the potential gets displaced by 500 mv in the negative direction, and this leads to the formation of differential-aeration pairs; the attendant hydrolysis of the anodic

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L 28541-66
ACC NR: AT6013808

3

products of corrosion causes the pH value in the clearance gaps to diminish from 8.0 (normal value) to 3.2-3.4. This, in its turn, leads to an increase in current intensity owing to the decrease in anodic polarizability. Thus, for pure aluminum AV00, in the presence of an O_2 concentration of 0.1 mg/liter the current intensity of the differential-aeration pair is 10 μa; if, however, given the same O_2 concentration, the pH value decreases to 4.0, the current intensity of the pair increases to 18 μa. A similar pattern is observed for the Al alloys AMg-5 and D16. As for Ti, it was found that, while it did corrode to a slight extent in narrow clearance gaps, it remains as highly corrosion resistant in sea water as it is under other conditions; the reason is that during anodic polarization pH value does not decrease in the clearance gaps of Ti. Cu-treated Ti is somewhat more corrosion resistant, specimens of a Ti-Cu alloy (VT-1D) were tested for 18 months in sea water and it was found that, while some characteristic corrosion arose on the barnacle-encrusted areas, the depth of this corrosion was insignificant -- of the order of 0.01 mm; even this slight corrosion, however, can be eliminated if the use of Ti to protect the underwater part of ship's hulls against barnacles is combined with the application of ultrasonic vibrations. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11, 07, 20/ SUBM DATE: 19Jul65/ ORIG REF: 008/ OTH REF: 003

Card 2/2 CC

L 28543-66 EWT(m)/T/EWA(d)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6013810 (N) SOURCE CODE: UR/0000/65/000/000/0366/0378 56 54 B+1

AUTHOR: Golubev, A. I.; Ulanovskiy, I. B.; Korovin, Yu. M.; Sevast'yanov, V. F.

ORG: none

TITLE: Effect of hydrogen sulfide on the corrosion of stainless and carbon steels

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2, Moscow, Izd-vo Metallurgiya, 1965, 366-378

TOPIC TAGS: stainless steel, carbon steel, sea water corrosion, hydrogen sulfide, hydrogen ion / 1Kh18N9T stainless steel, 1Kh13 steel, St. 3 carbon steel

ABSTRACT: H_2S in the sea is produced by sulfate-reducing bacteria which proliferate on barnacle-encrusted ship hulls and subsurface structures. In this connection, for stainless steel the effect of H_2S on electrode potential was investigated as a criterion of corrosion resistance of the steel. For carbon steel, the effect of H_2S on both the electrode potential and the self-dissolution processes was investigated. The experiments were performed in the presence of O_2 concentrations of < 0.1 and 9.0 mg/liter, variation in pH value from 8 to 2 and variation in H_2S concentration from 0 to 100 mg/liter. O_2 was removed by blowdown with N_2 extracted from air. The air, flowing via flow meter 1 (Fig. 1) and safety flask 2, entered cylinders 3-5 containing an alkali solution of pyrogallol in which it was relieved of most of its O_2. The

Card 1/4

L 28543-66

ACC NR: AT6013810

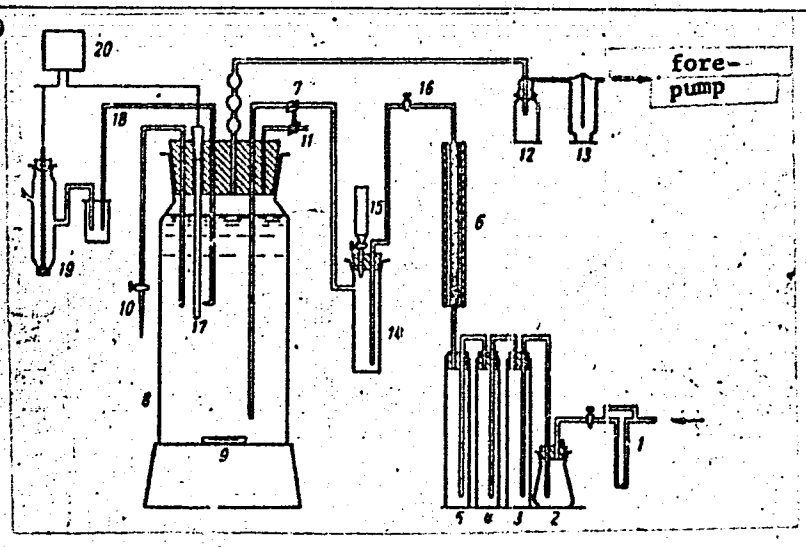

Fig. 1. Diagram of setup for investigating the effect of hydrogen sulfide on the electrode potential in the absence of oxygen:
1- flow meter; 2 - safety flask; 3, 4, 5 - absorption cylinders; 6 - tubular furnace; 7,11-three way valve; 8-test vessel; 9-magnetic stirrer; 10 - sampler; 12, 13 - safety flasks; 14 - vessel for producing H_2S; 15 - separatory funnel; 16 - two-way valve; 17 - test specimen; 18 - electrolyte; 19 - calomel electrode 20 - potentiometer

Card 2/4

remaining O_2 was absorbed in tubular furnace 6 containing copper chips heated to 600° C. The passage of air was facilitated by rarefaction produced with the aid of a fore--pump, with the rate of air inflow being determined by flow meter 1. Pure N_2 entered vessel 8 via three way valve 7. To accelerate the process of O_2 removal, the solution was stirred with magnetic stirrer 9. The samples were collected via tube 10. H_2S was produced by reacting HCl with a titrated Na_2S solution. The electrode potentials were measured by means of the P-4 potentiometer and anodic polarization curves were plotted by the potentiostatic method on using cylindrical specimens of 1Kh18N9T, 1Kh13 and St. 3 steels. The experiments were performed in Black Sea water (pH = ~8.0). Findings: H_2S and the intermediate products of its oxidation definitely affect the electrode potentials and corrosion of stainless and carbon steels. Thus, as the H_2S concentration of sea water increases the electrode potential is displaced in the minus direction owing to the sharp decrease in O_2 concentration stemming from the consumption of O_2 for the oxidation of H_2S. When the pH of sea water is <5.0, the corrosion rate in the presence of H_2S gets intensified owing to the facilitation of the process of hydrogen depolarization. The presence of H_2S in sea water markedly affects the anodic passivity of stainless steel (Fig. 2). Thus, in H_2S-free water (curve 4) passive state sets in at a current density of ~3 μa/cm^2, whereas in water with 35 mg H_2S/liter the current density required to attain anodic passivity is 3 times as high; in water with 60 mg H_2S/liter, 9-10 times as high (curve 2); and in water with 80 mg H_2S/liter no passivity is observed (curve 1). Hence the higher the H_2S concen-

L 28543-66
ACC NR: AT6013810

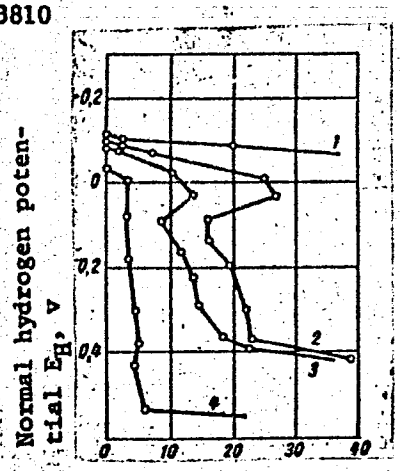

Fig. 2. Anodic polarization curves of 1Kh18N9T steel in sea water in the presence of hydrogen sulfide:
1 - 80 mg/liter H_2S; 2 - 60 mg/liter H_2S; 3 - 35 mg/liter H_2S; 4 - control experiment without H_2S

tration of sea water is -- in the absence of O_2 -- the faster the corrosion rate of steel becomes. If O_2 is present in the solution, the corrosion of carbon steel with increasing H_2S concentration initially decreases owing to the decrease in O_2 content, but later it increases. Orig. art. has: 7 figures, 1 table.

SUB CODE: 13,11/,07, 11/ SUBM DATE: 19Jul65/ ORIG REF: 018/ OTH REF: 001

Card 4/4

L 40154-66 EWT(m)/EWP(t)/ETI IJP(c) JH/JD/WB

ACC NR: AP6025722 (N) SOURCE CODE: UR/0365/66/002/004/0462/0466

AUTHOR: Ulanovskiy, I. B.

ORG: Academy of Sciences, SSSR, Institute of Physical Chemistry (Akademiya nauk SSSR, Institut fizicheskoy khimii)

TITLE: Corrosion of aluminum and aluminum alloys in sea water

SOURCE: Zashchita metallov, v. 2, no. 4, 1966, 462-466

TOPIC TAGS: aluminum, aluminum alloy, ~~aluminum corrosion~~, alloy, corrosion, sea water corrosion, ACID BASE EQUILIBRIUM, CORROSION RATE / AV-000 aluminum, AV-00 aluminum, AMts aluminum alloy, AMg-5 aluminum alloy

ABSTRACT: Corrosion behavior of AV-000 and AV-00 grades aluminum and AMts and AMg-5 aluminum alloys in the water of the Black Sea was studied. The water pH was found to have a pronounced effect on corrosive processes. Even a small increase in pH, such as from 8 to 8.5, shifts the potential toward more negative values. This greatly affects the corrosion process when corrosion is caused by the formation of macro- and micro- cells (crevice corrosion, contact with more positive metals, self-dissolution). In these cases, the pH of cathodic areas increases owing to the reduction of oxygen and the corrosion rate drops to an insignificant value between zero and 0.1 mm/year. AMts and AMg-5 alloy specimens tested in the Black Sea (pH 7.9—8.2) lost as much as 26.75 and 27.00 g/m^2 in the first six months, but as little as 1.75 and 0.50 g/m^2 in the following 18 months. If, however, pH increases

Card 1/2 UDC: 620.193.27

L 40154-66

ACC NR: AP6025722

in the whole water volume, the corrosion becomes much more intense. At pH of 8.0, 9.6, and 11.3, the respective corrosion rates of AV-000 aluminum were 0.0031, 0.019, and 1.219 $g/m^2 \cdot hr$; those of AMts alloy were 0.0033, 0.023, and 1.637 $g/m^2 \cdot hr$; and those of AMg-5 alloy were 0.0036, 0.017, and 1.304 $g/m^2 \cdot hr$. Orig. art. has: 4 figures and 4 tables.

[DV]

SUB CODE: 11 / SUBM DATE: 04Nov65/ ORIG REF: 009/ OTH REF: 001/ ATD PRESS: 5049

Card 2/2 mlp

L 34118-66 EWT(m)/T/EWP(t)/ETI IJP(c) DS/JD/WB
ACC NR: AP6012846 (N) SOURCE CODE: UR/0080/66/039/004/0814/0820

AUTHOR: Ulanovskiy, I. B.

ORG: Institute of Physical Chemistry, AN SSSR (Institut fizicheskoy khimii AN SSSR)

TITLE: Mechanism of breakdown of passive films in gaps

SOURCE: Zhurnal prikladnov khimii, v. 39, no. 4, 1966, 814-820

TOPIC TAGS: cathode polarization, dielectric breakdown, stainless steel, METAL FILM

ABSTRACT: The conditions associated with the breakdown of passive films in narrow gaps in stainless steels (1Kh13, Kh18N9T, 1Kh17N2) and experimental steels (1Kh17N2M2, 1Kh17N12M3) were studied in sea water (taken from the Black Sea). In order to plot the corrosion diagrams, anodic and cathodic polarization curves were recorded with an electronic potentiostat. The pH was changed by adding HCl. The breakdown of the passive film in all the steels tested was found to occur much more readily in narrow gaps as compared to a free surface: for example, the breakdown potential of Kh18N9T and 1Kh17N12M3 steels decreased by 0.235 and 0.465 V respectively. In such gaps, the oxygen concentration decreases, that of chloride ions increases, and the electrolyte becomes more acidic. The drop of the breakdown potential is due to the high chloride ion concentration. The breakdown of the passive film takes place when the potential of the cathodic surface exceeds the breakdown potential in the gap. Orig. art. has: 5 figures and 4 tables.

SUB CODE: 07, 11 / SUBM DATE: 11 Apr64 / ORIG REF: 007

Card 1/1 pb

UDC: 620.193.27

ACC NR: AP6036117 (N) SOURCE CODE: UR/0365/66/002/006/0747/0750

AUTHOR: Ulanovskiy, I. B.

ORG: Institute of Physical Chemistry, Academy of Sciences SSSR (Institut fizicheskoy khimii, Akademiya nauk SSSR)

TITLE: The effect of anodic polarization on corrosion behavior of aluminum and stainless steel 16 18 21

SOURCE: Zashchita metallov, v. 2, no. 6, 1966, 747-750

TOPIC TAGS: aluminum, corrosion, stainless steel ~~corrosion~~, sea water corrosion, ~~anodic polarization effect~~

ABSTRACT: The effect of anodic polarization on the corrosion behavior of aluminum and stainless steels submerged in sea water has been investigated. It was found that anodic polarization of aluminum accelerates the formation of a protective oxide film, thereby lowering the corrosion rate which at the potential of 0.5 v was about 90% lower than that without polarization. However, at potentials equal to or exceeding breakdown voltage, anodic polarization causes intensive corrosion of aluminum. This can be prevented by maintaining the potential below the breakdown level by means of a potentiostat. It was also established that anodic polarization of 1Kh13 stainless steel causes an intensive crevice corrosion, especially in narrow crevices of less than 0.01 mm. The same was found to be true for other types of

Card 1/2 UDC: 541.138.2.620.193.2

ACC NR: AP6036117

stainless steel. Therefore, anodic polarization cannot be recommended for stainless steel protection. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 13/ SUBM DATE: 04Nov65/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS:5106

Card 2/2

TUROVETS, I.G., prof., ULANOVSKIY, I.N., kand.med.nauk

Is ligation of the hepatic artery permissible in treating portal hypertension. Vrach.delo no.8:815-818 Ag '58 (MIRA 11:8)

1. Kafedra khirurgii sanitarno-gigiyenicheskogo fakul'teta (zav. prof. I.G. Turovets) Kiyevskogo meditsinskogo instituta.
(HEPATIC ARTERY--LIGATURE)
(HYPERTENSION)

ULANOVSKIY, I.N., kand.med.nauk (Kiyev, ul.Gor'kogo, d.11, kv.4)

Treatment of rectal fistulae. Nov. khir. arkh. no.3:56-60 My-Je '60. (MIRA 15:2)

1. Kafedra khirurgii (zav. - prof. I.G.Turovets) sanitarno-gigiyenicheskogo fakul'teta Kiyevskogo meditsinskogo instituta.
(FISTULA, ANAL)

RUDYAK, K.E.; ULANOVSKIY, I.N., kand.med.nauk

Infection with staphylococci in a surgical clinic. Nov. khir. arkh. no.5:125-128 S-O '60. (MIRA 14:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii (for Rudyak). 2. Kafedra khirurgii, zav. - prof. I.G.Turovets, Kiyevskogo meditsinskogo instituta (for Ulanovskiy).
(STAPHYLOCOCCAL DISEASE)

ULANOVSKIY, I.N., kand.med.nauk

Trauma of the external sphincter of the rectum in operations for paraproctitis. Khirurgiia no.6:60-64 Je '61. (MIRA 14:11)

1. Iz khirurgicheskoy kliniki (zav. - prof. I.G. Turovets) sanitarno-gigiyenicheskogo fakul'teta Kiyevskogo meditsinskogo instituta.

(SPHINCTER ANI--WOUNDS AND INJURIES)

ULANOVSKIY, I.N., kand.med.nauk

Treatment of acute paraproctitis. Vest.khir. no.9:133-134 '61.
(MIRA 15:3)

1. Iz khirurgicheskoy kliniki (zav. - prof. I.G. Turovets) sanitarno-gigiyenicheskogo instituta im. A.A. Bogomol'tsa.
(RECTUM--DISEASES)

ULANOVSKIY, I.N.

Experimental principles of new anastomoses of organs in the treatment of portal hypertension. Eksper. khir. i anest. 7 no.5:61-63 S-O '62. (MIRA 17:10)

1. Iz khirurgicheskoy kliniki (zav.- prof. I.G. Turovets) sanitarno-gigiyenicheskogo fakul'teta Kiyevskogo meditsinskogo instituta.

ULANOVSKIY, M. A.

Ulanovskiĭ, M. A. On stationary groups of motions of spaces with linear projective and affine connection. Doklady Akad. Nauk SSSR (N.S.) 71, 659–661 (1950). (Russian)

Let X_n be the n-dimensional space with linear projective connection given by the matrix $\|\omega_\beta^\alpha\|$ of linear differential forms ω_β^α $(\alpha, \beta = 0, 1, \cdots, n,\ \omega_0^0 = 0)$, where

$$\omega_\beta^\alpha(x, dx) = \Pi_{\beta\lambda}^\alpha(x_1 \cdots x_n)dx^\lambda,$$

Source: Mathematical Reviews, Vol. 12, No. 3

AUTHOR ULANOVSKIY M.A. PA - 3127

TITLE On the Conditions which determine the Objects of the Affinitive Connection of RIEMANN'S Space.
(Ob usloviyakh, opredelyayushchikh ob'yekty affinnoy svyaznosti prostranstva Rimana,- Russian)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 3, pp 507-508 (USSR)
Received: 6/1957 Reviewed: 7/1957

ABSTRACT As is known, an affinitive connection can be regarded as associated with a Riemann or pseudo-Riemann metric only if a constant field of the metric tensor g_{ij} exists in this connection. The problem of the existence of such a field is reduced to the investigation of the conditions on integrability of the equations $Dg_{ij} = 0$ $(i,j = 1,\ldots,n)$. Here $Dg_{ij} = 0$ denotes the absolute differential of the metric tensor. Next, these conditions are given for the case $n = 3$. Here

$$R_{ij},\ \nabla_k R_{ij},\ \nabla^2_{kl} R_{ij} (i,j,k,l = 1,2,3)$$

denote the matrices formed from the components of Riemann's tensor and its covariant derivations of first and second order.

CARD 1/3

On the Conditions which determine the Objects of the Affinitive Connection of RIEMANN'S Space.

If the assumed connection is Riemann-like a closed amount without interior points exists in the basis manifold X_3 which subdivides X_3 into open connected amounts. In each of these connected amounts one of the four conditions given here applies:
Finally, the following two theorems are given:
Theorem 1: If within a certain domain $V \subset X_3$ one of the conditions mentioned above and another condition also mentioned here is satisfied, a field of the positive definite metric tensor g_{ik} exists, which, within this domain, satisfies the equations $Dg_{ij} = 0$.

Theorem 2: An amount M without interior points exists, which subdivides the basis manifold of the space with linear connection into domains. For each of these domains, LIE'S algebra, which defines the unity components of the holonomy group of this domain is idential at any point x qith $L_p(x)$.

CARD 2/3

PA - 3127

On the Conditions which determine the Objects of the Affinitive Connection of RIEMANN'S Space.

With the help of the second theorem the condition of the integrability of the equations $Dg_{ij} = 0$ at any n may be set up.
(No Illustrations.)

ASSOCIATION: not given.
PRESENTED BY: A.N. KOLMOGOROV, Member of the Academy, 25.10. 1956.
SUBMITTED: 4.7. 1956
AVAILABLE: Library of Congress.

CARD 3/3

68799

~~16(1)~~ 16.5600

3/020/60/131/01/008/060

AUTHOR: Ulanovskiy, M.A.

TITLE: Stationary Groups of Motions of Affine Connectivity Spaces

PERIODICAL: Doklady Akademii nauk SSSR,1960,Vol 131,Nr 1,pp 34-36 (USSR)

ABSTRACT: Let A_n be a space of affine connectivity with the base manifold M_n ; S the group of its motions which leave fixed a point $0 \in M_n$; $\overline{S}$ the closure of S in the space of all matrices of given order ; E_n tangential vector space in the point 0 .

Theorem 1 : Let $\alpha \in \overline{S}$; U_k, V_{n-k} are assumed to be complementary linear subspaces with the property that $\alpha^p U_k = 0$, $\alpha^p E_n = V_{n-k}$ for a certain integer p. Then U_k, V_{n-k} are completely geodesic surfaces. Every linear subspace with the dimension k + 1 containing U_k is a completely geodesic surface too.

Theorem 2 : For every sequence $\{\alpha_k\} \in S$ $(k = 1,2,\ldots,\infty)$ the

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Stationary Groups of Motions of Affine Connectivity Spaces

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S/020/60/131/01/008/060

following linear subspaces are completely geodesic surfaces : a.) maximum U with the property that $\alpha_k U \to 0$; b.) maximum V with the property that the sequence $\{\alpha_k x\}$ is bounded for every $x \in V$.

Theorem 3 : For every real c ($0 < c < 1$) the invariant subspace which corresponds to all the characteristic numbers of the matrix $\alpha \in S$ whose absolute values are not larger than c, is a completely geodesic surface.

Three further theorems on related problems are given.

There are 2 references, 1 of which is Soviet, and 1 French.

Association: Voroshilovskiy gorno-metallurgicheskiy institut (Voroshilovsk Mining-Metallurgical Institute)

PRESENTED: November 13,1959, by I.G. Petrovskiy, Academician
SUBMITTED: October 27,1959

Card 2/2

ULANOVSKIY, M.A. (Kommunarsk)

Stationary motions of affinely connected spaces. Mat. sbor. 62 no.3:249-263 N '63. (MIRA 16:11)

SOV/68-59-9-9/22

AUTHORS: Tyutyunnikov, Yu.B. and Ulanovskiy, M.L.

TITLE: The Influence of the Composition of the Gaseous Heat Transfer Medium on the Properties and Quality of the Formed Fuel

PERIODICAL: Koks i khimiya, 1959, Nr 9, pp 27 - 32 (USSR)

ABSTRACT: The production of formed metallurgical coke by the IGI AN SSSR method (Ref 1) involves a rapid heating of crushed coal to a temperature at which it can be softened so that the formation of briquettes can be done at a low pressure. Gaseous heat transfer medium is most suitable for the purpose, as a good mixing of coal with the medium and thus a high heat transfer coefficient can be obtained. However, it was found on operating a continuous coking pilot plant that the nature of the gas used has a substantial effect on the plastic properties of coal and thus on the strength of the formed fuel. Moreover, the ability of coal to stick to the walls of the apparatus depends on the composition of the gaseous medium. For this reason an investigation of the influence of the composition of gaseous heat transfer medium on the properties of coals was carried out on a laboratory apparatus (Figure 1). Coals crushed to - 0.5 mm

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The Influence of the Composition of the Gaseous Heat Transfer Medium on the Properties and Quality of the Formed Fuel

(properties - Table 1) were heated with the following gaseous heat transfer mediums: pure nitrogen, carbon dioxide, superheated steam, binary mixtures of carbon dioxide or nitrogen with additions of 1 to 3% of oxygen. Coals were heated to 20°, 260 and 350°C with the above gases. After cooling of the heated coals in an inert atmosphere their properties were tested. Changes in the hygroscopic moisture and volatile content of coals after this heating are shown in Figures 2 and 3 respectively, changes in the caking ability (Roga number) - Figure 4; changes in the maximum stress of deformation (sheer stress determined in a plasticity apparatus) - Figure 5; results of shatter tests of formed briquettes (dropping the briquettes 20 times from a height of 1.8 m and determining the amount of -25 mm fraction) - Figure 6; structural strength of briquettes (500 revolutions in a drum and determining the yield of -mm fraction) - Figure 7. It was found that changes in coal properties depend mainly on the amount of oxygen in the gaseous heat transfer medium. E.g., the hygroscopic moisture of coals heated to the same temperature depends

The Influence of the Composition of the Gaseous Heat Transfer Medium on the Properties and Quality of the Formed Fuel

on the amount of oxygen in the gas. Obviously due to oxidation reactions new micropores are formed. On heating low rank coals in an inert atmosphere from 200 to 350°C the hygroscopic moisture decreases, the reverse was observed for coals of a higher rank. On adding up to 1% of oxygen, an increase in hygroscopic moisture in all coals is observed. Thus by choosing an appropriate composition of the gaseous heat transfer medium and on heating to an appropriate temperature, the properties of coals can be modified in a required direction so as to obtain the neccessary mechanical strength of the briquettes.
There are 7 figures, 1 table and 7 Soviet references.

ASSOCIATION: UKhIN
Card 3/3

ULANOVSKIY, M.S.

USSR/Forestry - Forest Biology and Typology. K-1

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91502

Author : Ulanovskiy, M.S.

Inst : Kharkov Agricultural Institute.

Title : Vertical Zoning and the Forest Types in the Yaremchanskiy Forest, the Delyatinskiy Leskhoz, Stanislavskaya Oblast.

Orig Pub : Zap. Khar'kovsk. s. kh. in-ta, 1957, 16 (53), 69-76.

Abstract : In the territory of the Yaremchanskiy forest (7059 ha) which is situated at the junction of the foot hills of the Precarpathian elevated plain and the eastern Carpathians, the following height zones are found together: 1) A zone of mixed woods with oaks (at a height of 450 m above sea-level) where the beech, sycamore, fir, hornbeam and Norway maple trees grow. The predominant types are humid and coal oak forests with fir and hornbeam.

Card 1/3

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91502

2) A zone of beech forest (400 - 700 m); in the upper parts, more fir trees are found, and spruce trees appear. The fundamental types are pure silver fir and hornbeam forests, predominantly humid. 3) A wood zone containing predominantly, silver fir and the addition of beeches, spruces, sycomores (650-900 m). Here are the major types: silver fir forests with spruces and beeches, sometices beech and silver fir forest. 4) Forests with a preponderance of spruce which are found in the lower regions (from 900 to 1200 - 1300 m) and are usually mixed spruce forests with some beeches, silver firs and a few other species, and also in the upper parts (from 1200 -1300 to 1500 - 1600 m) where they consist purely of spruce trees. 5) A zone of sloping moss forests containing spruce, mountain pine, cedar, juniper, green alder and mountain ash with the basic forest types of mountain pine and cedar-spruce, pine and moss forests.

USSR/Forestry - Forest Biology and Typology. K-1

Abs Jour : Ref Zhur - Biol., No20, 1958, 91502

6) The subalpine and alpine belts which are well expressed at the Goverl'summit (2053 m; Goberl'Forest). Bibliography contains 26 titles. -- A.P. Rysin.

Card 3/3

L 00749-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AP6005345 SOURCE CODE: UR/0413/66/000/001/0090/0091

AUTHOR: Ulanovskiy, O. O.

3/
B

ORG: none

TITLE: An instrument for drawing calibration lines on circular scales. Class 42, No. 177635

14

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 90-91

TOPIC TAGS: angle measurement instrument, instrument calibration equipment, precision instrument machinery

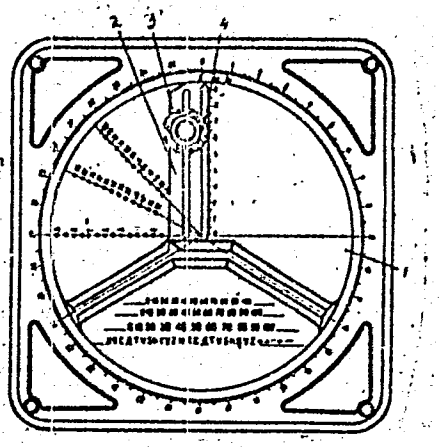
ABSTRACT: This Author Certificate presents an instrument for drawing calibration lines on circular scales. The instrument includes a graduated circle, a calibrated ruler with a longitudinal groove which rotates in respect to the circle, and an adjustable appliance which fits in the groove of the ruler and is used for drawing the lines of different lengths (see Fig. 1). The design simplifies the construction of the instrument. The appliance for drawing the divisions of different lengths is made in the form of a plate having four three-step grooves positioned along its rim at mutually perpendicular axes. The plate also has a cross-shaped slot situated on its back edge side.

Card 1/2 UDC: 744.3.53.089.62

L 00749-67

ACC NR: AP6005345

Fig. 1. 1 - graduated circle;
2 - calibrated ruler; 3 - plate;
4 - three-step grooves of the plate



Orig. art. has: 1 figure.

SUB CODE: 14/ SUBM DATE: 18May64

Card 2/2

ULANOVSKIY, TS.

7683. ULANOVSKIY, TS. -- Trudovyye uspekhi obuvshchikov. (L'vovskaya obuvnaya f-ka No. 3. Lit. zapis' YE. Prigradova). L'vov, Kn. zhurn. izd., 1954. 44. s 20 sm. 1.000 ekz. 70K.--Na ukr. yas. -- (55-1639)
685.31.02st.

SO: Knizhnaya Letopsis', Vol. 7, 1955

ULANOVSKIY, V.P.; KOGAN, A.V.; SEMENYUK, E.P.

Correctly organized photocopying is a necessary factor in improving the effectiveness of information work. NTI no.12: 12 '65. (MIRA 19:1)

1. Konstruktorskoye byuro "Termopribor", L'vov.

ULANOVSKIY, V.P.; KHOVANSKIY, G.S.; DITKIN, V.A., prof., otv. red.; ORLOVA, I.A., red.; KORKINA, A.I., tekhn. red.

[Interpolation of tabulated functions of several variables by means of numerical and nomographic representation] Interpolirovanie tablichnykh funktsii mnogikh peremennykh sredstvami chislennogo i nomograficheskogo predstavleniia. Moskva, VTs AN SSSR, 1963. 74 p. (MIRA 17:1)
(Functions of several variables)
(Interpolation)

ULANOVSKIY, V.P. (Moskva); KHOVANSKIY, G.S. (Moskva)

Nomographing of functions of two and three variables. Mom. sbor. no.2:124-132 '64. (MIRA 18:3)

ULANTSEV, I.D., inzh.

Operating mobile crushing and grading plants. Transp.stroi. 10 no.2:32-34 F '60. (MIRA 13:5)
(Sand and gravel plants--Equipment and supplies)

ULANTSEV, I.D., inzh.; DE [illegible] A.D., [illegible].

Laying tracks on reinforced [illegible] ties. Transp. stroi. 11 no.2: 16-18 F '61. (MIRA 14:2)

(Railroads--Ties, Concrete)

ULANTSEV, I.D., inzh.

Ballasting the track in winter. Transp. stroi. 12 no.11:15-18 N '62.
(MIRA 15:12)
(Railroads—Construction)

ROZANOV, A.A., inzh.; CHIZHOV, A.T., inzh.; ULANTSEV, I.D., inzh.

Manual on the mechanization of ballasting. Transp.stroi. 13 no.9: 73-74 S '63. (MIRA 16:12)

ULANTSEV, I.D., inzh.

Improve the use of ShPM-02 tie tamping machine in the construction of railroads. Transp. stroi. 15 no.7:27-29 Jl '65. (MIRA 18:7)

ULANTSEV, I.D., inzh.; LISKOVETS, S.A., inzh.; PODOL'NIK, Z.Ya., inzh.; ROKKO, M.A., inzh.

Norms for ballast volume in the construction of wide-gauge railroad tracks. Transp. stroi. 15 no.9:9-10 S '65. (MIRA 18:11)

1. TSentral'nyy institut normativnykh issledovaniy i nauchno-tekhnicheskoy informatsii v transportnom stroitel'stve (for Ulantsev, Liskovets, Podol'nik). 2. Nauchno-issledovatel'skiy institut ekonomiki stroitel'stva Gosstroya SSSR (for Rokko).

ULARIU, I.

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Q-3

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Author : Labutin N.I., ~~Ulusevich L.S.~~
Inst : Moscow Academy of Veterinary Medicine
Title : The Blood Picture in Swine as Depending on Breed and Feeding

Orig Pub : Tr. Mosk. akad. vet., 1958, 20, 214-216

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USSR/Medicine - Brucellosis (Contd) Jan 51

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